

Climate Change Impacts in San Diego County

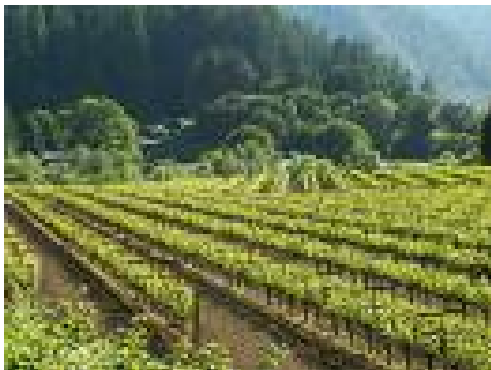


Presented by Nicola Hedge
The San Diego Foundation's Climate Initiative





Climate Change is the challenge of our lifetime



California is on the leading edge of efforts to address climate change

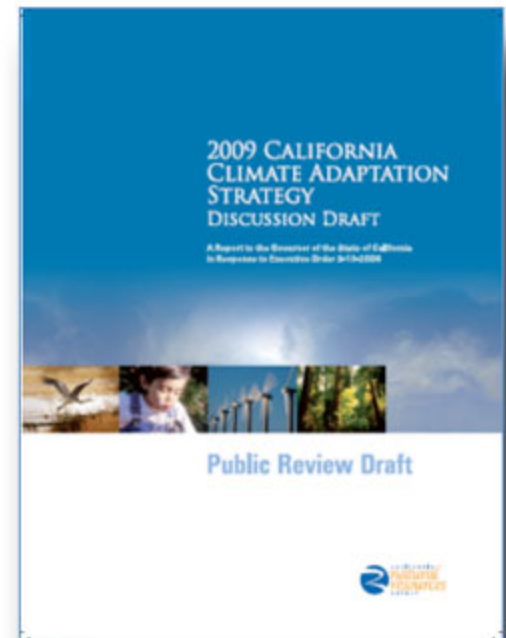
1. Greenhouse gas emissions mitigation

(Global Warming Solutions Act)

2. Climate change impacts

(CA Climate Adaptation Strategy)

...Chula Vista is pioneering local strategies in both areas



2050
FOCUS

Comprehensive Climate Action

Mitigation:

Actions to reduce greenhouse gas emissions

+ Adaptation:

Actions to avoid, withstand, or take advantage of current and projected climate changes and impacts, and increase a system's resiliency to impacts

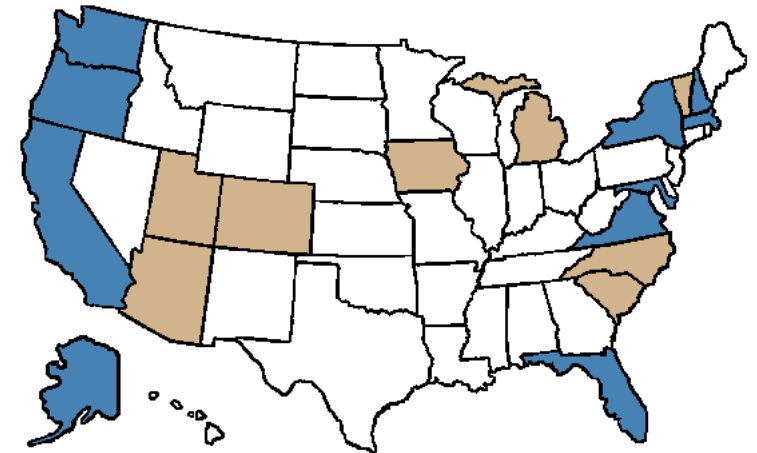
= Climate Action

Why Adapt?

1. Some level of climate change cannot be avoided
2. Decision-making on the basis of historic climate is no longer robust
3. Continued emissions and even warming of 2°C could result in hazardous climate changes for Chula Vista
4. Studies illustrate that planned adaptation is usually less expensive than later, reactive measures
5. Adaptation could provide immediate local benefits

State of Adaptation Planning

- Proposed Federal Climate Bill addresses adaptation
- Numerous U.S. states are developing climate adaptation strategies



Source: Pew Center on Global Climate Change

- Relatively fewer local governments have begun developing formal adaptation strategies

(Chicago (IL), Homer (AK), Keene (NH), King County (WA), Miami-Dade (FL), New York (NY), San Diego (CA), San Francisco (CA))

Source: ICLEI

Focus 2050 Study

Primary Question: *What will our region look like in 2050 due to climate change, if current trends continue?*
(King County model)



Focus 2050 Study

Overall Message: *While the projections may be alarming, we can act now to change the future*



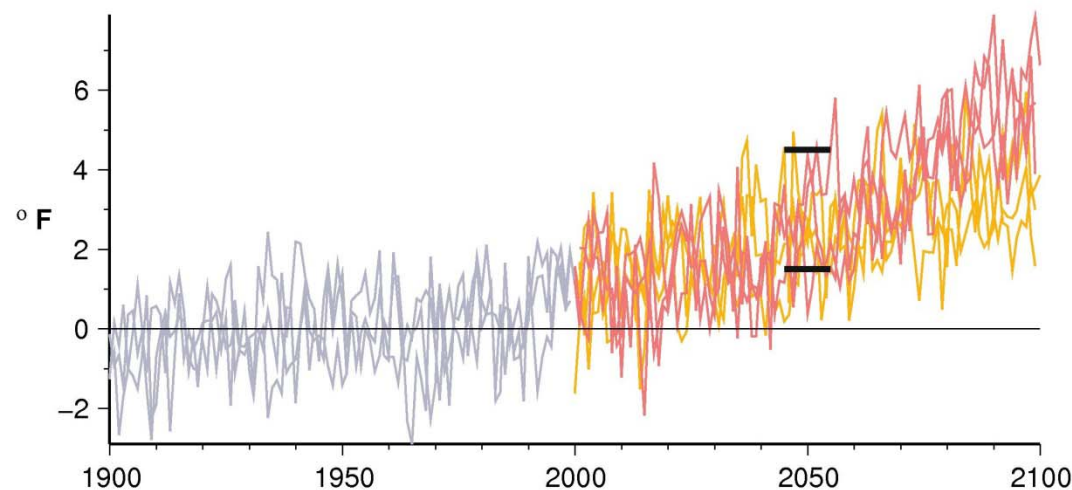


Regional Climate Change

Average annual temperatures will be between 1.5 & 4.5°F higher by 2050

- Early November will “feel” like September currently does.
- Our region will become even more vulnerable to drought.

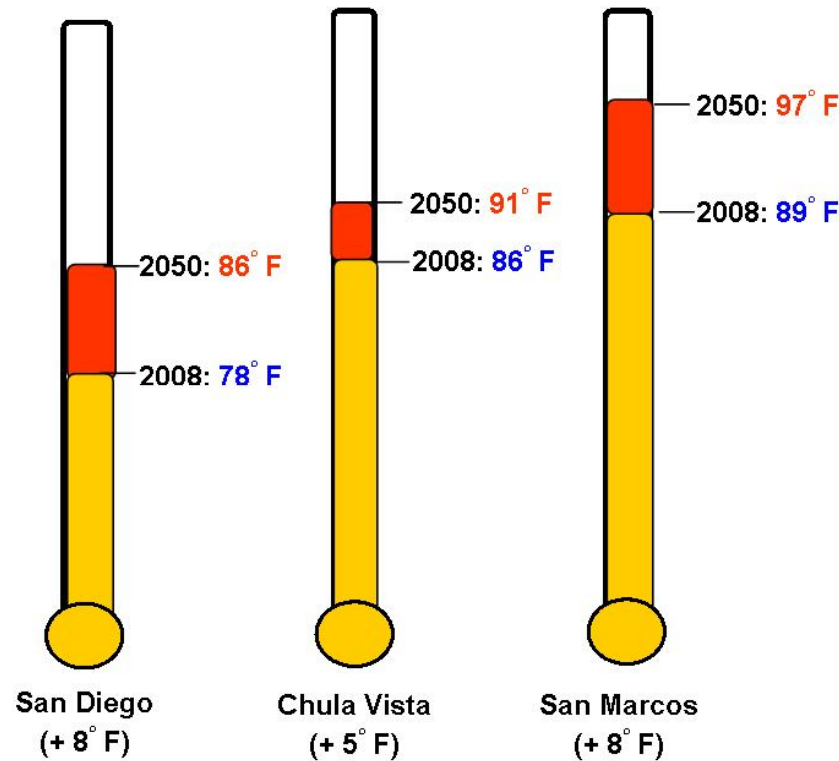
Projected annual temperatures for San Diego County
over the next several decades





Regional Climate Change

Expected difference in August average temperature by 2050



Average *annual* temperature increase will rise be 1.5 and 4.5 degrees warmer, but peak summer temperatures will be considerably higher.

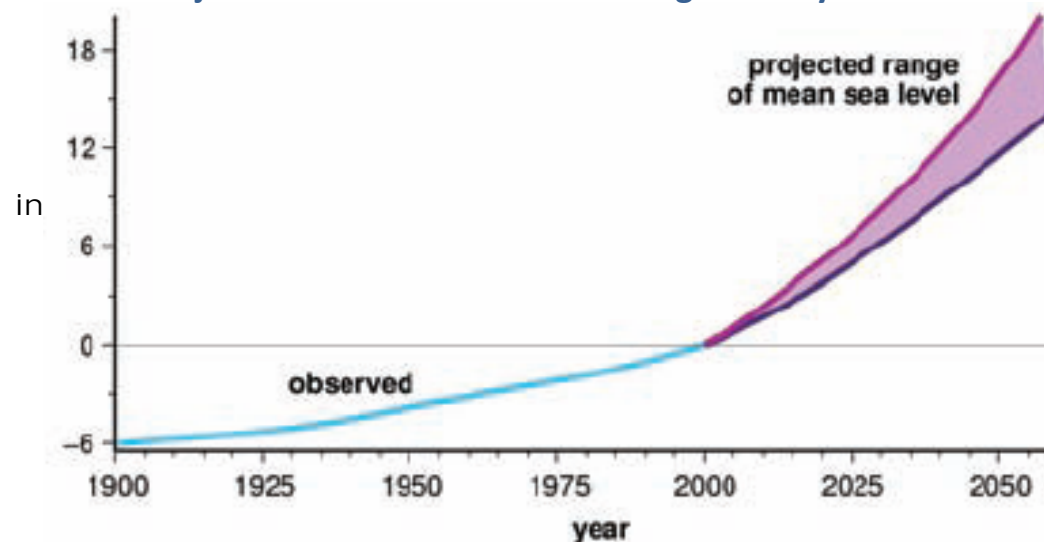


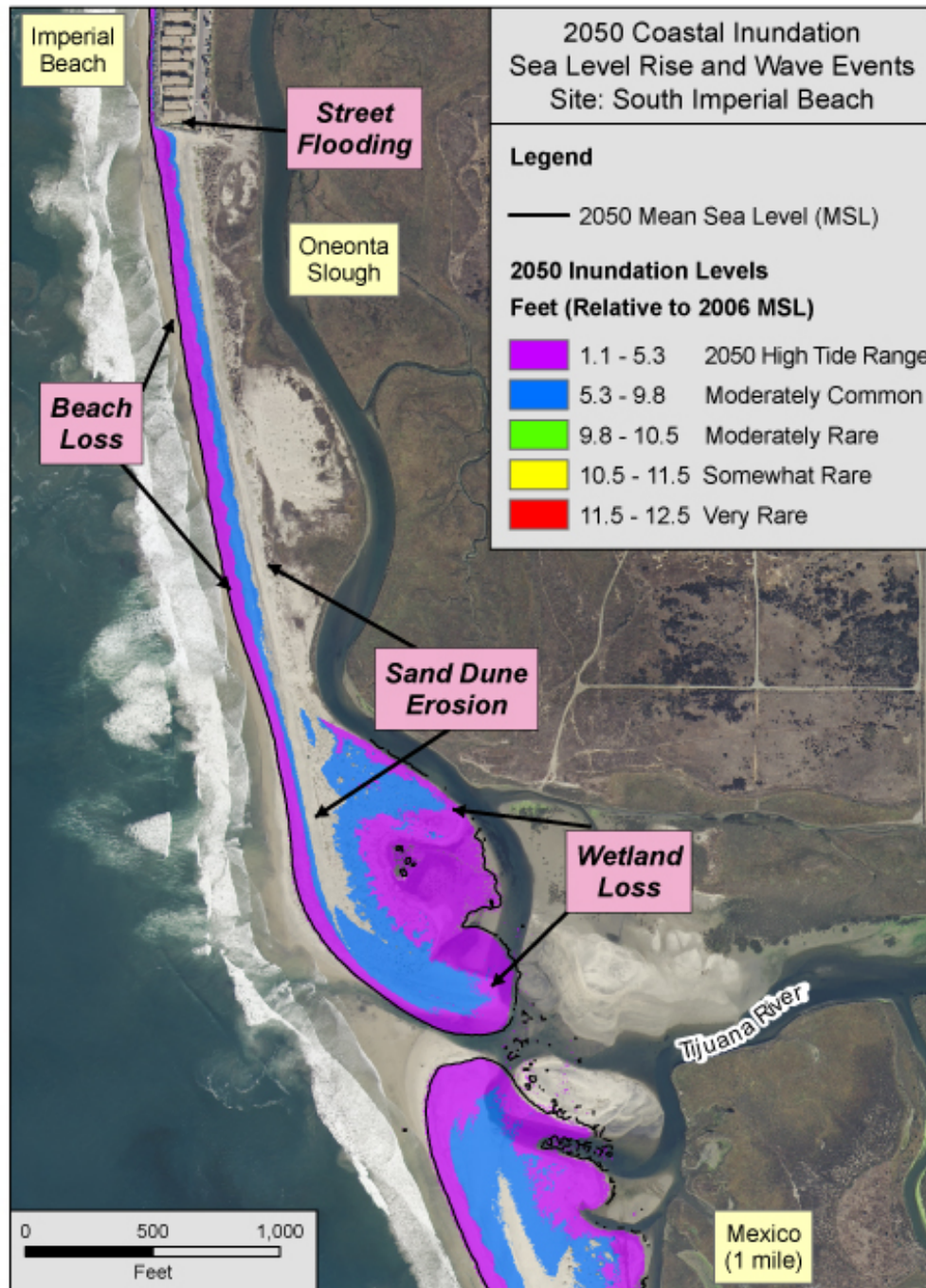
Sea Level Rise

Sea level is projected to rise by as much as 18 inches

This, combined with tidal and storm surges, will cause harm or loss of our sandy beach areas, wetlands, coastal commercial, municipal, & residential properties

Projected sea level rise for San Diego County until 2050





Sea Level Rise by 2050 in Imperial Beach





Sea Level Rise

Infrastructure Vulnerabilities



Source: Dr. Rick Gersberg, San Diego State University

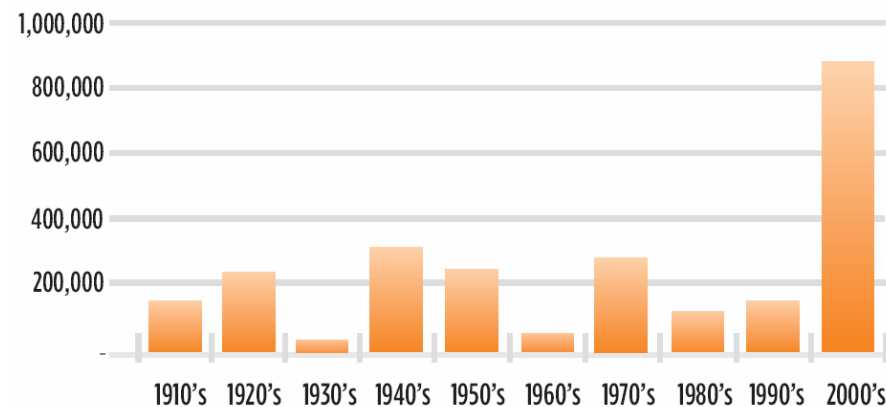


Wildfires

2050
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Wildfires will become more frequent and intense due to warmer temperatures, drought and drier conditions, as well as potentially extended Santa Ana winds.

Total acreage historically burned by wildfires in San Diego County

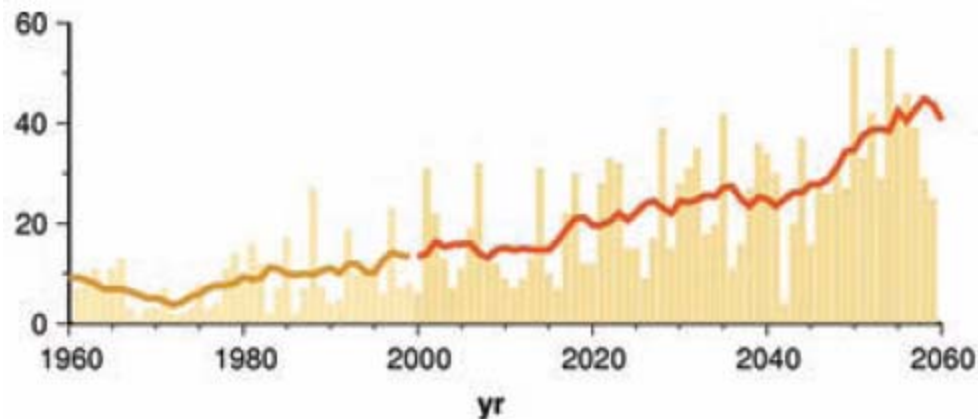




Public Health

Increased heat and air pollution will take a toll on public health, particularly for the elderly, who will comprise almost a $\frac{1}{4}$ of the population by 2050.

The number of days over 84°F in Chula Vista between May & September could triple.

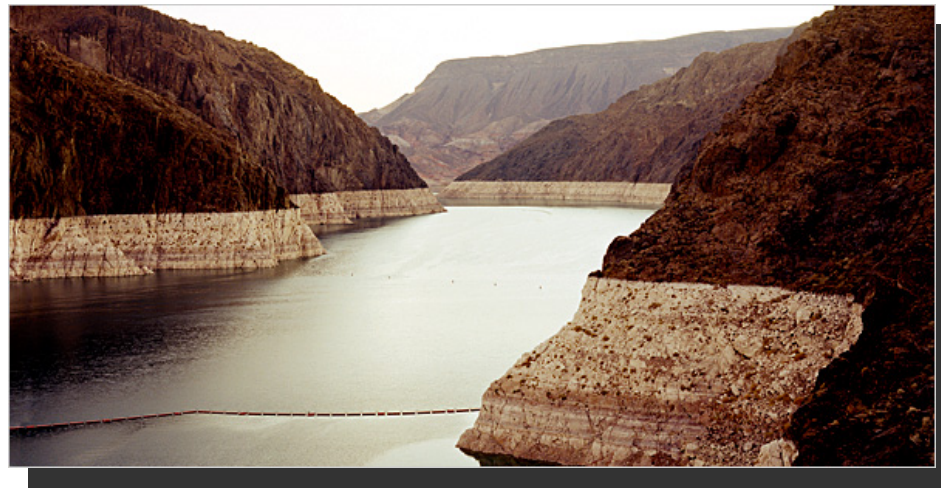




Water

2050
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Despite existing plans for water conservation, desalinization, and recycling, demand for fresh water will outstrip supply by 2050.



There will be growing potential for conflicts among multiple state users



Ecosystems

Plant and animal habitats in San Diego will be increasingly threatened due to:

- climate change too rapid for some species to adapt
- increased wildfires & more intense droughts
- habitat fragmentation and urban sprawl



The southern Sagebrush Lizard is found only at elevations above 5,000 ft. With already reduced populations, they may disappear from local mountains that "top out" at 6,000 feet if temperatures continue to rise.



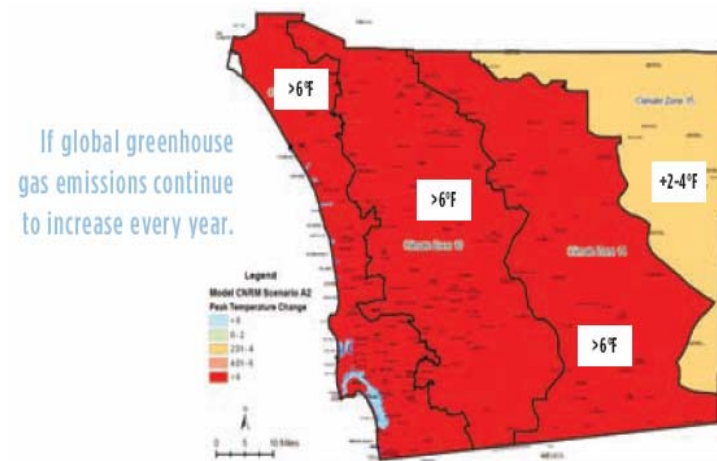
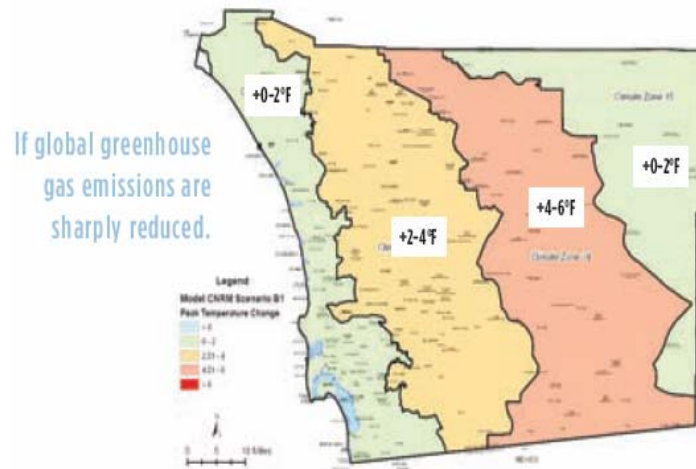
Electricity

2050
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Managing regional energy demand will be even more challenging by 2050

Peak electricity demand will increase by over 70% with warmer temperatures causing about 7%.

Projected change in summer daytime peak temperatures in San Diego County in the year 2050





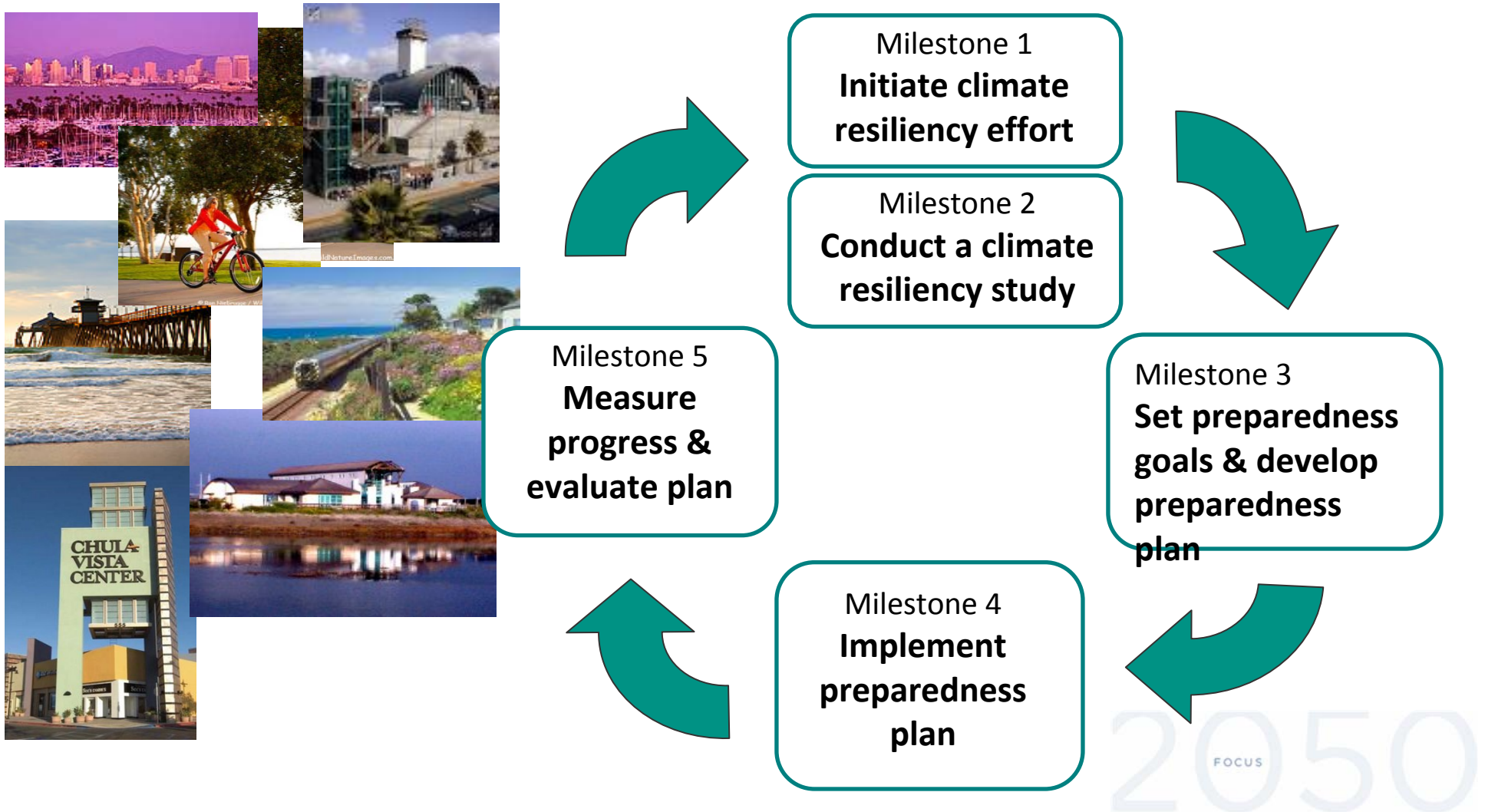
Business &

Economy

- Other studies on sea level rise cost impacts to California infrastructure (energy & transportation infrastructure, private structures, insurance liability)
- Many aforementioned impacts have consequences for the local economy
 - Costs from wildfires & heat waves
 - Tourism asset loss (weather, biodiversity, coastal areas)
- Opportunities to take advantage of
 - Weather
 - Incentives Programs (CCSE, Chula Vista Clean Business)

What Local Governments Can Do

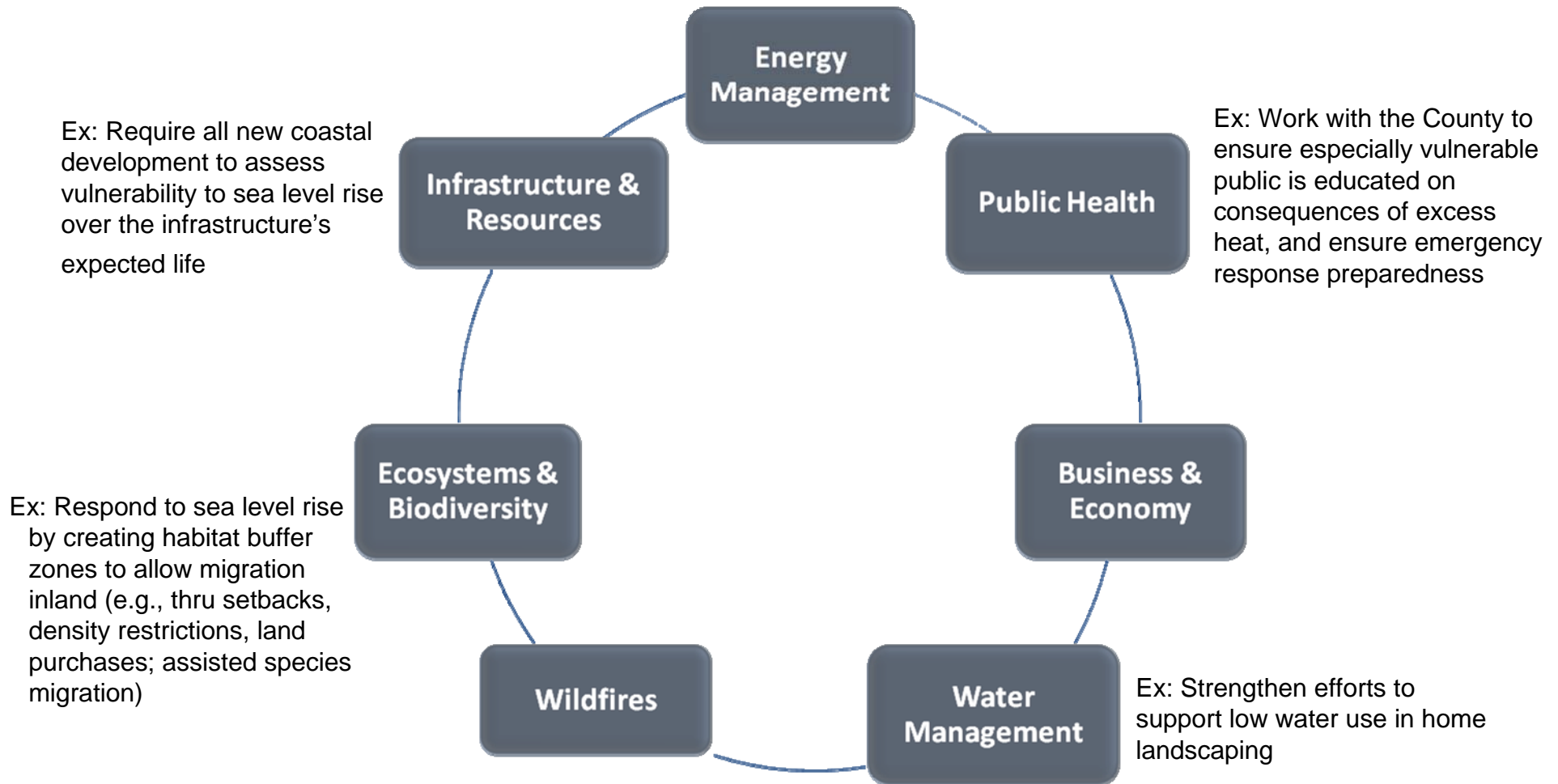
ICLEI's Five Milestone Adaptation Planning Process



Adaptation & Mitigation

Complementary and Conflicting Adaptation and Mitigation Actions			
Favorable Actions		Unfavorable Actions	
Favorable for Adaptation and Mitigation Efforts	Favorable for Mitigation, but Unfavorable for Adaptation Efforts	Favorable for Adaptation, but Unfavorable for Mitigation Efforts	Unfavorable for Adaptation and Mitigation Efforts
<ul style="list-style-type: none"> ▪ Energy Demand Management ▪ Energy Efficient Buildings ▪ Water Conservation ▪ Biodiversity-Oriented Forestry ▪ "Smart Growth" ▪ Development in Cooler Regions 	<ul style="list-style-type: none"> ▪ Forestry with Non-Native Species ▪ Urban Forestry (shade trees) with High Water Demand ▪ Some Biofuels Production 	<ul style="list-style-type: none"> ▪ Meeting Peak Energy Demand with Fossil Fuels ▪ Wastewater Recycling and Desalination ▪ Groundwater Banking ▪ Increased Air Conditioner Use ▪ Use of Drainage Pumps in Low Lying Areas 	<ul style="list-style-type: none"> ▪ Development in Floodplains ▪ Traditional "Sprawl" Development ▪ Development in Hotter Regions
Source: Bedsworth and Hanak (2008) - Reprinted with Permission by Authors			

Example Adaptation Options



Our Partners

2050
FOCUS

Bank of America



Zell Family Foundation

TSX Group, Inc

Platt/Whitelaw Architects, Inc.



Orca, Hervey Family, Beyster Family, Hattie Ettinger Conservation Funds

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Please visit www.sdfoundation.org for the full text of this report

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